

SOLE

APPLICATION

FOR

UNITED STATES LETTERS PATENT

PLASTIC GUSSET BAG WITH CLOSURE AND CUT-OUT HANDLE  
METHOD

SPECIFICATION

To All Whom It May Concern:

Be it known, that I, Violet Hanson, a citizen of the United States residing at P.O.Box 68, Old Bethpage, New York, 11804, State of New York, has invented a certain new and useful improvements in a PLASTIC GUSSET BAG WITH CLOSURE AND CUT-OUT HANDLE (METHOD) of which the following is a specification:

DIVISIONAL APPLICATION OF PATENT #10/322,545

NOW CLASS 403 - SUB-CLASS 219.

This is my divisional application of Patent #10/322,545. In Patent application #10/322,545, I have elected Claims 1-8 in Class 206 without transverse. (See attached letter)

In this divisional patent application I am electing to delete Claims 1 - 8.

Claims No. 9 through 18 inclusive remain intact for this divisional application in class 493 - sub-class 219. Balance of this application is the same as prior application.

### RELATED APPLICATIONS

The present application contains disclosures found in applicant's earlier in Patent 3,988,970, Patent #3,916,770 and Patent #4,230,300 issued a "square bottom" or "flat bottom" plastic bag and Provisional Patent Application #601/365028 dated 3/18/02 and Disclosure Documents #492644 dated 4/23/01 and #492645 dated 4/23/01.

### BACKGROUND OF THE INVENTION

The present invention relates to the closure of open top, thin plastic, gusseted bags including a "square bottom" plastic bag, "T" shirt bag and any top opening bag with side gussets formed of thin plastic material.

Plastic gusseted "square bottom" or "flat bottom" bags and regular gusseted bags have supplanted paper bags for use in super markets, retail establishments, and other establishments. These bags utilize the entire space of the plastic bag, stand up right by itself and is self-supporting so that it makes loading and unloading the bag easier.

This heretofore not available new closure will enable such plastic bags to have many uses apparent to the user and the reader of this application.

This bag may be used to hold products in markets, such as, food, deli counter operations, dog food and the like as well as boxed and canned goods. While made of flexible plastic material may be made of  
5 sturdy and strong, i.e., heavy wall construction that the filled bag may be conveniently carried. It would also be extremely beneficial to provide means for automated closing the open top after the bag is filled.

10 It is the object of this present invention to close a "flat bottom" or "square bottom" gusseted bag, after being filled, at the upper edge of the bag while allowing a maximum opening for filling and discharge of the bag.

15 Another object of this present invention is to provide the bag for use for liquids, solids, semi solids, frozen and defrosted items while maintaining the integrity of the self-standing bottom plastic gusseted sack or bag.

20 It is another object to provide a "flat bottom" bag with automatic top closure having a carrying handle. The objects as well as other objects and advantages will be obvious from the following disclosures.

SUMMARY OF THE INVENTION

In my prior patents, U.S.#3,988,970, 3,916,770 and 4,230,300, I disclosed plastic bags and their manufacture in which a flat bottom has been formed.

5 The "flat" or "square bottom" bag is formed from a tubular sleeve having gussets on each side. A long transverse seal is applied to the bottom of the tube to form a bag. An internal opening mechanism is provided to open and "square off" the bottom. Two bottom seals are applied to reinforce the bottom of the bag. Further, square bottom serve to allow the bag to be neatly folded for stacking and shipping. The bags shown in these patents also have side gussetts similarly designed to allow folding and stacking for shipping.

15 According to the present invention a gussetted bag of the type shown in my earlier patents containing a tubular sleeve having an open top, a closed bottom wall, a front and back faces and a pair of opposing side walls connecting the front and back faces is improved. The side walls are formed with at least one fold creating in the side walls at least one gusset allowing the front and back faces to extend from each other. The gussets are sealed unitarily

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at the bottom ends of the bottom wall, sealed  
through and through along their top edges of the  
the front and back faces inwardly respective from  
the side wall. Then, as will be seen the "square  
5 bottom" bag takes on a triangular lengthwise shape  
normally biased closed at the top but easily openable  
for maximum full and discharge of the interior of  
the bag.

Full details of the present invention are set forth  
10 in the following disclosure and shown in the accom-  
panying drawings.

#### BRIEF DESCRIPTION OF DRAWINGS

In the drawings:

Fig. 1 is a series perspective views showing the  
construction of a flat bottom tubular bag,

15 Fig. 2 is perspectal view of a flat bottom bag having  
the gusset construction of the present invention,  
Fig. 3 is a view of the bag invention, on its side,  
Fig. 2 is a view showing the discharge of goods from  
the interior thereof.

DESCRIPTION OF THE INVENTION

Seen in Fig. 1, a typical endless roll plastic of tubular sleeve construction 10 used to form the initial bag 12 to which the invention is applied to. In step A, a portion of the endless tubular sleeve is shaped in accordance with the afore  
5 mentioned patents, to which reference can be made as if more fully set forth. The sleeve is cut in Step B, to have a rectangle shape with a transverse cross section having a pair of opposing faces 14 and a pair of side walls 16. Each side  
10 wall 16 is formed with at least a one longitudinal gussets 18 although two pair are preferred. The gussets 18 are folded inwardly and the tubular sleeve flattened by pressing the the opposing faces 14 in together. Then, in Step C, the plastic bag is opened and a "former" or mandrel is  
15 moved into the bag 14 so as to "square off" the bottom to make a "flat bottom" 20. In Step D, bottom seals 22 (one on each side of the bottom) are applied to seal the bottom to the side walls 16 making the "square bottom" rigid. As seen in Step E and F, the  
20 bag is then sealed with a seam 24 from side wall

to side wall at the bottom with a heat sealing mechanism making the "T" shirt bag leaving the top open ended as at 26 bag.

Turning to Figs. 2 and 3, the present invention provides the top edge 26 with a closure seal 46 applied to limit of the length of gusset sides 18. The reduced gussets sides 18 are made as small as as possible without interfering with the required size of the bag and integrity of the "square bottom" or "flat bottom" 20. After the gusset sealing is completed all the gusset faces are pressed together and sealed at the top end of the bag with at least one or two band seals 30 including longitudinal seal 48 sealing the pressed gusset faces completely through the film or sheet of plastic.

The top edge 26 of each face may be reinforced with stay 32 of bendable material, such as a corset stay so the bag automatically closes. Also a band 34 integral with the front and rear faces 14 to extend upward longitudinal seal extends from the gussets upward therefrom an opening 36 is fashioned in the



band 34 establishing a handle 38. Below the handle, along the top of the bag itself, a zipper or other closure device 46 may be placed, so that the contents of the bag can be locked and held for shipment.

The number of seals 30 on each side gusset 18 can be selected as desired along with the longitudinal seal 48. At least one diagonal seal 40 is made at the bottom end of the longitudinal seal 48 on each side of the bag. These diagonal seals 40 made at the end of the longitudinal seal 48 reinforce the longitudinal seal and enable the easy flow of goods out of the bag.(See Fig. 3)

The block seals 30 are made near the top of the bag to insure that the bag is not torn when filling or emptying out. These block seals also allow the user a place or location to grasp the bag at time of opening, closing the bag and discharging the contents at time of unloading bags. Block seals are applied simultaneously when the long longitudinal seal and diagonal seals are made through all the side gussets. As a matter of fact, all foregoing seals (30,40,48)

can be made at one time. Once the gusset seals,  
block seals, longitudinal and diagonal seals are  
in place, the band and a zipper closure with  
cut-out handle maybe formed to the upper portion  
5 of the bag separately by sealing a portion of the  
flap of the zipper closure to the front and back  
of the new construction sealed bag.

If made separately, the entire upper portion of the  
10 bag containing the cut-out handle and zipper  
closure is heat sealed to the upper portion of  
lower bag. The additional block seal 50 is to prevent  
the zipper from opening past the gussetted sealed  
15 upper portions of the bag itself.

Further a small slit 42 is made in the bag at a  
location below the top edge closure. This will enable  
the easy flow of material in and out of the bag allow  
air to also blow out of bag.

20 As seen in detail in Figs. 2 & 3, all gusset members  
are sealed together. All gusset sides are pressed  
and all seals are applied including the long longi-

tudinal seal and diagonal seal are applied at one time. The seals are made on both sides of the bag. Fig. 2 shows the smaller gussetted sides 18 to allow for a larger opening to load and unload any material in the bag. Note the reduced gusset side size 10 is to allow for maximum opening of the bag without destroying the integrity of the gussetted "square bottom" "flat bottom" bag.

Fig 2 and 3 clearly show the small slit 42 made in the bag to allow air to escape from the bag at time of loading, as well as the zipper closure to the bag along with a cut-out handle. The block seal 50 on the zipper portion of the closure is also clearly shown.

As seen from the foregoing, a "flat bottom" plastic bag be constructed of any desired size and for any selected use and function. The plastic film from which the bag is constructed can be transparent or opaque to allow for identifying and merchandising

material. Seen in Fig.2 and 3, a translucent film  
having a transparent window 44 is shown. The resultant  
bag has a triangular tubular shape. The "flat bottom"  
being larger in girth through the body of the bag,  
5 thereby allowing the bag to stand upright with the  
top distended to allow access and egress of material  
Similarly, the bag can be placed on its side as seen  
in Fig. 3.

Furthermore, the bag allows the addition of a handle  
10 and a locking zipper or other closure device. Thereby,  
the resultant bag may be used as a handbag, pocket  
book or satchel tote.

Thus the scope of the disclosure should not be seen  
as limiting this invention should be derived only  
15 from the appended claims.